DOCUMENT RESUME

ED 102 647 EA 006 752

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TITLE Changing and Improving Educational Systems and Institutions.
PUB DATE Jul 74
NOTE 36p.; Paper presented at International Intervisitation Programme on Educational Administration (3rd, Great Britain, July 1974); Best copy available

EDRS PRICE MF-$0.76 HC-$1.95 PLUS POSTAGE
DESCRIPTORS Bibliographies; *Change Strategies; *Educational Change; *Educational Innovation; Educational Research; Models; Organizational Change; Organizational Development; *Organizational Theories; *Research Reviews (Publications); School Systems
IDENTIFIERS *Planar Strategies

ABSTRACT

Research into the process of educational change has centered largely around the diffusion concept--the spread or permeation of an innovation from system to system or from school to school throughout a particular state or number of states. It is as if many teachers and administrators have understood the purpose of educational change to be the adoption of as many innovations as possible, while the consequences of this approach have been largely ignored. Two distinct approaches to the diffusion concept are identifiable. The first has been concerned with identifying the intrinsic characteristics of an innovation that influence its adoption; the second has considered factors not directly related to the innovation itself. The purposes of this paper are to briefly consider the contribution that research has made to an understanding of educational change and to offer a model--the planar--that may assist administrators in effecting beneficial educational change. (Author/WM)

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CHANGING AND IMPROVING EDUCATIONAL SYSTEMS AND INSTITUTIONS

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INTRODUCTION

Nowadays it is extremely difficult to discuss education without mentioning change and innovation. That the social backdrop to education is ever-changing--and at an increasing rate--there is no doubt. That education is changing also appears a valid conclusion but the speed with which it is changing is open to considerable debate. Certainly it is conventional wisdom to speak of widespread and spontaneous change and innovation in education as though the processes are self-evident. Yet when one asks if, in recent years, schools have changed at a rate and in a manner commensurate with that of society as a whole, the foregoing assumption appears, at the least, extremely tenuous. At times, one is forced to conclude that for many educators--and especially for many administrators--conversation and publication amply laced with the mention of "innovations adopted" are the hallmarks of professional standing, the enhancers of peer group status and the symbols of the educator's plugged in, switched on, with it, modern image. Thelen (1961) expresses a not uncommon view of the contemporary situation:

> In the face of all these changes . . . the schools' society and culture seems largely undisturbed. Comparing classrooms now with the classrooms of 40 years ago, one notes that at both times there were numbers of students not much interested in what was being done; the typical teacher still presents material and quizzes the kids to see if they understand it; the amount of creativity and excitement is probably no greater now than then. The development of new materials and techniques has enabled us to spin our wheels in one place, to conduct business as usual in the face of dramatic changes in the society and in the clientele of the school.[1]

[1] See also Martin and Harrison (1972) and Fullan (1972) who lend emphasis to this perception of the amount of "real" change that has taken place in contemporary education.

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Accordingly, this paper has two purposes: first, to consider briefly the contribution that research has made to an understanding of educational change; second, to offer a model which, it is hoped, will assist administrators in effecting beneficial educational change. "And mad ambition trumpeteth to all."

RESEARCH ON EDUCATIONAL CHANGE: THE MAIN THRUST

What is known about change in educational organizations? Most studies of educational change have been concerned primarily with the adoption of specific educational innovations. They have been conducted in the relatively decentralized milieu of education in the U.S.A. where research has centred largely about the diffusion concept, namely the spread or permeation of an innovation from system to system or from school to school throughout a particular state or number of states. Attempts to answer such questions as why one innovation is adopted more readily than another or why one system of education is more innovative[2] than another, have all been contingent in one way or another on this approach. Most diffusion research has been directed towards the variables associated with innovativeness. Two distinct approaches are identifiable. The first has been concerned with identifying the intrinsic characteristics of an innovation that influence its adoption; the second has considered factors not directly related to the innovation itself.

(i) Intrinsic Characteristics of the Innovation

At first glance it might appear that adoption is dependent simply upon the "nature" of the innovation itself, especially those intrinsic characteristics held to be preferable to those of other innovations. Miles (1964), for example, in an analysis of research findings, asserts that there

[2] For some of the problems encountered (i) in defining school innovativeness see Fullan and Eastabrook (1970); (ii) in measuring innovativeness see Holdaway and Seger (1968).

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are five characteristics of an innovation that influence its adoption, namely, (i) cost, (ii) technological factors, (iii) availability of associated support materials, (iv) simplicity of implementation, and (iv) innovation-system congruence. Those most widely accepted as influencing adoption have been identified by Rogers (1962).[3] The characteristics, all of which are dependent upon the perceptions of the adopter, are (i) the relative advantage offered over any similar idea or process, (ii) the compatibility of the innovation with the adopting system, (iii) its complexity, (iv) its divisibility, i.e., the extent to which the innovation can be "tried" on a partial or limited basis before adoption, and (v) communication, ie., the ease with which an innovation can be described and explained.

The use of its intrinsic characteristics as a device to predict whether an innovation will be adopted (or whether a particular school or system will adopt that innovation) has not proved very revealing, however. It seems that the "nature" of an innovation is not sufficient alone to predict whether (or when) an innovation will be adopted by an individual, a school or an education system.[4]

(ii) Non-Instrinsic Factors Related to Adoption

The second and more popular approach to the study of the adoption of educational innovations has been to investigate characteristics of the "adopter unit", namely, communities, schools, systems, superintendents, principals and teachers. Again, the great majority of this research has been carried out in the U.S.A. To attempt to document the multitude of

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[3] See also Rogers and Shoemaker (1971).

[4] See, for example, Carlson (1965); Kohl (1966); Spencer (1967); Oskamp (1968); Littleton (1970).

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findings that have emerged is certainly beyond the ambit of this paper.[5] Generally, however, one finds a series of "biographical" and demographic characteristics which distinguish between the more innovative and the less innovative adopter units. For example, relative to his less innovative counterpart, the innovative superintendent (i) is younger,[6] (ii) has attained a higher level of education,[7] (iii) has had more administrative experience,[8] (iv) has taught for fewer years,[9] (v) is better prepared professionally, through reading and through attendance at conferences and workshops,[10] (vi) has belonged to and supported more professional organizations,[11] (vii) has come from the "outside" into his current system,[12] (viii) remains in his current system for a comparatively shorter period of time,[13] (ix) has more extensive channels of commmication,[14] and (x) enjoys a higher status

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[5] For a detailed summary see Rogers and Shoemaker (1971).

See, for example,

[6] Todd (1963); Jensen (1967); Hawkins (1968); Heisler (1968); Ramer (1968); Hern (1969).

[7] Todd (1963); Jensen (1967); Spencer (1967); Hawkins (1968); Heisler (1968); Ramer (1968); Hearn (1969).

[8] Klingenberg (1966); Hearn (1969).

[9] Allen (1967).

[10] Nicholson (1965); Hearn (1969); Scott (1970).

[11] Heisler (1968).

[12] Carlson (1962); Reynolds (1965); Hall (1966); Knedlik (1967); Heisler (1968); Preising (1968).

[13] Todd (1963); Reynolds (1965); Hall (1966); Jensen (1967); Hawkins (1968); Ramer (1968); Hearn (1969).

[14] Carlson (1962); Klingenberg (1966); Heisler (1968); Scott (1970).

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in the social structure relative to other superintendents.[15] Nor does the description end there. Numerous additions could be made to the profile from findings that relate to differences in personality traits,[16] and leadership characteristics.[17] Characteristics of innovative principals and innovative teachers can also be combined to construct very similar profiles.

Factors relating to other than school administrative and teaching personnel have also been shown to have an influence on the adoption of educational innovations. Community factors have been identified, for example, the educational and social characteristics that reflect the level of faith or expectancy in education as a powerful instrument of society,[18] the attitude of school boards,[19] the location[20] and size of schools[21] and school districts.[22] Foremost among this category of studies, however, have been those that have revealed the apparent importance of an economic factor which, although defined in a variety of terms, has linked innovative schools and systems

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15 Carlson (1965); Jensen (1967); Heisler (1968); Peets (1970).

16 Nicholson (1965); Allen (1967); Reese (1967); Spencer (1967); Heisler (1968).

17 Goetz (1965); Jacobs (1965); Sargent (1965); Klingenberg (1966); Jensen (1967); Spencer (1967); Santo (1968); Hearn (1969); Kuhn (1969); Scott (1970).

18 Mort and Ross (1957).

19 Currie (1966); La Plant (1966); Hawkins (1968); Heisler (1968); Kunzler (1968); Richland (1968); Scott (1970).

20 Bergsma (1963); Mertz (1965); Spencer (1967); Richland (1968).

21 Bergsma (1963); Kendig (1965); Kohl (1966); Allen (1967); Spencer (1967); Preising (1968); Gill (1970); Wright (1970).

22 Spencer (1967); Lawrence (1968); Preising (1968).

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with "wealthier" districts or communities,[23] higher per-pupil income or expenditure,[24] and the payment of higher salaries to administrative and/or teaching staff.[25]

(iii) Limitations of Diffusion Research

In spite of the apparent wealth of generalizations that have emerged from diffusion-type studies the educational administrator must view such information with care for there are both methodological and applicational limitations that should be considered.

The most widely used method of ranking adopter units' innovativeness has been by means of an adoption scale. On this, the respondent is given a list of innovations that first became "available" during a certain period of time. The respondent is asked to indicate which innovations he adopted and also when he adopted them.[26] In accord with the definition above the "more innovative" unit will adopt more innovations and do so earlier than its less innovative counterpart. There have been many variations of this approach,[27] however.

The major weakness of adoption scale analysis is that it focusses

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23 Mort and Ross (1957); Bergsma (1963); Kendig (1965); Nicholson (1965); Brievogel (1967); Spencer (1967); Pafford (1967); Hawkins (1968); Roosa (1968); Santo (1968).

24 Storkel (1962); Nicholson (1965); Hanson (1966); La Plant (1966); Brievogel (1967); Spencer (1967); Hughes (1968); Marcum (1968); Preising (1968); Ramer (1968); Roosa (1968); Foster (1969).

25 Carlson (1962); Goetz (1965); Nicholson (1965); Breivogel (1967); Spencer (1967); Johnson (1968); Richland (1968).

26 La Plant (1966); Allen (1967); Breivogel (1967); Carswell (1968).

27 Adoption scales have included as few as one (Kindsvatter (1966)) and as many as 69 innovations (Carswell (1968)). Some are scored only in terms of the number of innovations adopted; (e.g. Addis (1968); Lawrence (1968); Peterson (1968)); in temporal terms some cover a wide span of years; others are concerned essentially with the short term. Some scales are used merely to distinguish between extreme groups such as "most innovative" and "least innovative"; others are used to place each adopter in any one of a number of categories.

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on only a limited aspect of the total change process.[28] As such it assumes that innovations are developed elsewhere and "imported" by the adopter unit. No allowance is thereby made for innovations developed internally, e.g. by the teachers in a particular school; no recognition is permitted Thompson's (1952:2) definition of innovation as " . . . the generation, acceptance and implementation of new ideas, processes, products or services. Innovation . . . . implies the capacity to change or adopt." Further, the adoption scale assumes, in large measure, that its selected innovations are intrinsically "valuable" and are implemented automatically by the commitment to adopt.

The adoption of a particular innovation by a school is usually reported by an administrator[29] (such as the principal or superintendent).[30] Seldom, however, are other important details provided, for example, the nature and extent of the use of the innovation,[31] the degree of teacher acceptance (and, conversely, the degree of resistance) and the benefits and consequences of the outcome. A fundamental weakness, is that the diffusion research tradition is based largely on the adoption of innovations by individuals, e.g. farmers, medical practitioners. But, because of the nature

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28 Havelock (1971) reported adoption is an inadequate measure of educational change because it is the "wrong" dependent variable. See also Fullan (1972) and Rogers and Shoemaker (1971).

29 In Fullan's (1972:6) terminology the adopter is, therefore, not necessarily the "user" of the innovation.

30 Information may also be gathered from (e.g.) central office records (Eibler (1965); Klingenberg (1966); McGrath (1971)). Ranking of schools or personnel is also occasionally used. Although not a difussion approach in the strict sense such a method usually aims at providing information and data of a similar kind. (Leas (1965); Bickert (1967); Jenkins (1967); Jensen (1967); Thomas (1972)).

31 Exceptions to this may be seen in the studies by Hinman (1966), Marcum (1968) and Ochitwa (1973).

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of schools, educational innovations are organizational innovations. Consequently, reported adoption may give little if any indication as to the degree to which an innovation has been institutionalized, i.e., as to what extent it has become part of the regular day-by-day structure and/or process of the school qua organization. It is probably quite erroneous, therefore, to construct a profile--albeit hypothetical--of an innovative school or system by combining the results of findings such as those reported above.[32] Research on the factors associated with the adoption of innovations by schools in the relatively centralized Australian systems tends to confirm this belief.[33]

Undoubtedly studies of educational innovation conducted in the diffusion tradition tell something about educational change. Nevertheless, the value of such findings is limited. Obviously, the restrictions of the particular methodologies used impose necessary qualifications when interpreting results. The nature of the findings also appear somewhat discouraging for the practising administrator concerned with improving schools that are conservative, static and non-innovative. For example, how could such an administrator effect change in a school located in an indigent socio-economic area, staffed by a principal and teachers who are "old", have neither read nor travelled extensively and have worked within the same system for a relatively long period? Perhaps he could replace the school staff with the "hero innovator" whose characteristics match those of the research findings reported above. But this could only be done at the risk of denuding other schools in the system of the same qualities and certainly wouldn't guarantee

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[32] The author is guilty of such a practice. See Thomas (1972 : 120).

[33] See Thomas (1972 : 128-9).

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success in his objectives. Clearly, however, the socio-economic characteristics of the community are beyond his manipulation.

(iv) Impediments to Change

Thus far the approach of this paper has been to consider research that focussed essentially on factors related to school and system innovativeness, factors thought, therefore, to be the facilitators of educational change. The preceding sections have ignored what may paradoxically prove to be a more fruitful approach, namely the consideration of the factors that inhibit educational change.[34]

Again, although not as extensive as the output of diffusion research, an impressive volume of findings is emerging. Watson's (1966) comprehensive survey of inhibitors in the educational environment serves as an excellent summary of findings. Arguing along lines not unlike those in the Guba-Getzels nomothetic-idiographic model, Watson indicates that a combination of inhibiting forces is at work--those within the individual personality, e.g. the principal and teacher, and those that operate within the social system.

Resistance in Personality

1. Homeostasis, the built-in regulatory mechanism that returns an organism to a constant or steady state. It is because of this that educational changes frequently prove to be only temporary.

2. Habit. The establishment of a habit usually suggests a degree of satisfaction to the operator. After the institution of a new educational practice, the "new" practice becomes as resistant to change as was its predecessor.

3. Primacy. The way in which an individual first "successfully" copes with a situation sets a pattern that is most persistant and often, despite in-service courses and supervisory efforts, teachers continue to teach as they themselves were taught.

4. Selective Perception and Retention. Once a particular attitude has been established a teacher responds to other suggestions in terms of the framework of his established outlook.

[34] Lewin's (1951) crucial work in this area has, of course, always directed attention to the importance of reducing resistance if change is to be effected with minimal stress.

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5. Dependence. Teachers (and administrators) tend to incorporate and imitate the values, attitudes and beliefs of those who once were their teachers and on whom they relied so heavily.

6. Superego. This Freudian concept is a powerful tradition-serving agent. Watson suggests that people entering occupations in which they try to inculcate "higher standards" in others have stronger superego components. As such they take pride in making severe demands on themselves and on others. They bitterly resist any change which they conceive to be a relaxation of the firmest discipline and the highest expectations of perfection in performance.

7. Self-Distrust. Based on childhood dependencies and the tradition-oriented voice of the superego, children learn to distrust their own impulses. Accordingly, at a later stage, impulses to alter school procedures felt by principals, parents, teachers and administrators are stifled by a similar feeling.

8. Insecurity and Regression. There is a tendency to seek security in the past. The reaction of insecure teachers, administrators and parents to the pace of modern social change is often to try to hold first to the familiar or even to return to some tried-and-true "fundamentals" typical of the school of the past.

Resistance in Social Systems

1. Conformity to norms. Norms in social systems correspond to habits in individuals. Organizations, for example, demand customary and predictable ways of behaving.

2. Systematic and Cultural Coherence. It is difficult to change one part of an organization without effecting changes elsewhere in the system. Repercussions elsewhere in a system, may be more influential in the survival of a particular change.

3. Vested interests. Within the school, system and community "vested interests" are probably too numerous to elaborate. Most obvious sources of resistance, however, are economic or prestige interests of individuals when threatened.[35]

4. The Sacrosanct. These are the day-by-day procedures held to be "sacred" by members of the organization. In a school invariably these are linked with its so-called "traditions" and are frequently supported in an unthinking way.

5. Rejection of "Outsiders". Although it seems that "the major impetus for change in organizations is from outside" such change pressures are frequently opposed.

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[35] Willower (1963) has identifed the "strength" of the status quo as an inhibitor of school change.

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In another significant analysis Abbott (1965:47) argues that the bureaucratic ideology and related dysfunctions in U.S. schools impede educational change. He points out that the hierarchical ordering of power and authority imposes severe restrictions on the development and adoption of innovations at the lower levels.

> Since the right to innovate represents a potent source of power in the organization, ... innovation from below is difficult to achieve . . . . . This is true for at least two reasons. First, ideas that originate at the lower levels in the hierarchy encounter difficulty in receiving an adequate hearing. Second, any individual in a subordinate position, who takes the lead in introducing new programs of action, runs the risk of having sanctions imposed by his superordinate to allow that superordinate to escape the blamability which is inherent in the monistic system.

Similarly, the hierarchical definition of roles impedes innovation. The superordinate has the "rights" to veto (or to affirm), to deference, to decide the form of the organization, to determine the personnel to be employed, to initiate activities, to assign activities, to settle conflicts, and, of particular importance, to control communication[36] Abbott also argues that the bureaucratic structure of the school impedes the professional development of the teaching role.

Abbott's argument is supported by Miles (1965) who characterizes schools in terms of their "output ambiguity", i.e. their goals are inadequately expressed and uncertain. As such teachers have come to rely on the ritual application of rules. Rules, have, in turn, become ends in themselves. Miles also believes that in these changing times schools are subject to high "input variability" from their environments. There is, therefore, a high level of uncertainty associated with school procedures which also tends to consolidate the reliance on rules and prescribed procedures.[37]

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[36] See, however, Shephard (1967) who points out that the "underworld of technique and technology" (i.e., the informal organization) may also be very powerful in this regard.

[37] For further detailed commentaries on the nature of change resistance in organizations see, for example, Coch and French (1948), Zander (1950), Lawrence (1954), Lippitt, Watson and Westley (1958).

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RESEARCH: THE DEVELOPING THRUST

It is probably accurate to state that the studies collected and edited by Miles (1964) in Innovation in Education collectively represent the first concerted effort to break out of the constrictions of the traditional approach to the study of educational change. Further studies that have appeared in the 1970's have consolidated this movement by concentrating more on the internal operational aspects of schools undergoing change. Increasingly, attempts are being made "to analyze the structure and function of the innovation-receiving system as a context for innovation" (Miles (1965:55-6) or, as Fullan (1972:7) interprets the movement, to study the use of innovations and "the users' role in the process of school change". In many ways these studies add relatively more to an understanding of the resistance process.

Smith and Keith's (1971) Anatomy of Educational Innovation is a most intensive study whose purpose was to describe "the events that make up the beginning of an innovative school". The particular innovation studied was basically one of school design in which all facilities were especially planned to facilitate individualized learning. The innovation was, in effect, a totally new environment catering for team teaching and all of its varying organizational possibilities--ungradedness, total democratic pupil-teacher decision making and a learner-centred environment. Information for the study was provided by participant observation interview, analysis of documents, meetings and field notes that recorded in precise detail events that took place within the first year of life of Kensington school. As conceived by the local school superintendent and administered by the principal, the objectives

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[38] Undoubtedly two of the most prominent contemporary insitutions involved in the study of educational change are the Centre for Educational Research and Innovation and International Management Training for Educational Change. The work of CERI and IMTEC, the subject of papers to be given during this International Intervisitation Programme, will not be discussed here.

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of Kensington were not unlike those of Summerhill. But the incongruity of an innovative school and the resistances that developed among its teachers and a conservative, dissatisfied, political community, roduced the school within a year to much the same status as Risinghill.

Smith and Keith identified many change inhibitors in Kensington. For example, too much was expected of his teachers by the principal. Although a visionary with a detailed plan for the growth of his new born school the principal did not adequately communicate with his teachers. The developing organizational climate which he saw as conducive to change because it provided teachers with freedom to innovate was perceived by them as laissez-faire, unconcerned and unhelpful leadership. Unfortunately, it was not realized that to be successful Kensington required very significant role changes in its teachers. The study shows quite clearly, however, that teachers encountered great difficulty in coordinating staff and student schedules and team-teaching activities. A third unanticipated problem arose from the apparent inability of students to work in a programme so dependent upon a high degree of self responsibility. Again, inadequate provision was made for the additional demands on teachers' time and energy that the nature of the school's operation demanded.

It is relevant to report Gross, Giacquinta and Bernstein's (1971) findings. Their study, also conducted in a single school, analyzed the process of implementation and focussed, in particular, on "the extent to which organizational members have changed their behavior patterns required by the innovation". Gross et. al. explain the failure of the change in terms of teachers' (i) lack of a clear understanding of the details and purposes ".

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of the change; (ii) inability to play the new roles demanded of them; (iii) unwillingness to participate--or to continue to participate--in the innovation; and (iv) the lack of the necessary supporting instructional materials.

One important finding that emerges consistently from studies such as the two cited above is that "successful" innovation is directly related to the extent and nature of teacher involvement in the total process of change. For example, the unsuccessful innovation in the Gross et. al. study was introduced to teachers as a fait accompli. Similarly, in his extensive summary of school change attempts, Sarason (1971) defines a "modal process of change", illustrating the concept with the development of new math. The innovation, developed outside the schools, was introduced to teachers also as a fait accompli and with many faulty assumptions about teachers' ability to accept the innovation easily and without major doubts as to its efficacy. Speaking of the modal process of change in recent years Silberman (1970:182) states that "the failure to involve ordinary classroom teachers in the creation and modification of the new curricula--tended to destroy or at least inhibit the very spirit of inquiry the new courses were designed to create."

A STRATEGY OF CHANGE MODEL

The foregoing sections have been presented in the belief that knowledge of the change process is of value to the educational leader since it provides him with a better information base on which to develop administrative action. Accordingly, attempts have been made (i) to describe what have been--and what are emerging as--the main methodological approaches to the study of educational change, and (ii) to identify what appear to be the important findings that emerge repeatedly from these studies. In this

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section attention is now turned to a particular strategy which, hopefully, in conjunction with the findings reported previously, will assist the practising administrator in more successfully effecting change.[39] This intention is based on the assumption that educational innovations are usually--although not exclusively--introduced by superordinate members of the organizational hierarchy.

Implicit in the concept of planned educational change is the process of innovation, i.e., the systematic introduction of "a new or different concept, methodology, organization or program . . . into the classroom" (Miller (1967:iv)). Since most innovations initially are introduced into an education system "from above" the nature of the administrator (change agent) - teacher (adopter) relationship assumes considerable importance during the adoption process. The manner in which the change-agent seeks to implement change will subsume a number of important elements of administrative behavior. Egon Guba (1967:4) argues that:

> the most potent solutions that man can devise to overcome his problems have little utility if practitioners are not informed about them, or if they have little opportunity to discover that which they need to know about how the solutions work.

It therefore becomes part of the administrator's behavior.

> to create awareness and to provide opportunities for the assessment of the invention along whatever dimensions the potential adopter may feel necessary . . . (this), in short, makes the invention available and understandable to the practitioner.

Guba states that basically the foregoing can be achieved through the use of one or more of six techniques:

1. Telling, a form of communication which involves the word, written as in newsletters, monographs, books, articles, or spoken as in conferences, speeches, conversations.

2. Showing, a form of communication which involves a direct confrontation with the phenomena of interest. It may involve structured experiences such as pictures, slides, films, videotapes.

[39] For an excellent treatment of strategies of change see Dalin (1973).

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3. Helping, consists in a direct involvement of the change agent in the affairs of the adopter on the adopter's terms. It may take the form of consultation, inservice trouble-shooting, and the like.

4. Involving, takes the form of an inclusion or cooptation of the adopter. It may enlist the adopter in assisting with the development, testing, or packaging of an innovation or in contributing the problems to which innovative solutions are to be sought.

5. Training, takes the form of familiarizing adopters with features of a proposed innovation, or of assisting them to increase their skills and competencies or to alter their attitudes. It may be accomplished through formal university credit courses, institutes, workshops, internships, apprenticeships, extension courses, local in service training, T-group sessions and similar experiences. Training may involve telling, showing, helping, or involving, but differs from these other techniques in that the adopter makes a formal commitment to learn by allowing himself to become involved in the training.

6. Intervening, consists in the direct involvement of the change agent on his own terms, not those of the adopter. It may take the form of mandating certain actions, e.g., adopting a statewide textbook, or inserting certain control mechanisms, e.g., instituting a statewide testing programme.[40]

Hence the change agent

> has the task of building awareness and understanding of an innovation and causing potential adopters to consider its features with a view to possible adoption. To discharge this function he has essentially six techniques at his disposal. He will use any combination of these techniques to cause favourable consideration without resorting to hucksterism or unethical manipulation. He sees himself as a person opening viable professional alternatives to the potential adopter with a problem to solve.

In large measure it seems likely that the techniques used by an administrator in introducing change may be related to the implicit or explicit assumptions which he holds as to the nature of the adopter.

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[40] On closer examination these techniques have many similarities with Greiner's (1964) classification of the power resources most frequently practised by managers. A. Unilateral Power - decree, replacement, structural, B. Shared Power - group decision, group problem solving, C. Delegated Power - data discussion, sensitivity training.

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Guba suggests seven basic assumptions[41] which may be held:

1. Value assumption. The adopter is viewed as a professionally oriented entity that can be obligated to adopt through an appeal to his values, e.g., on behalf of "what is best for the children".

2. Rational assumption. The adopter is viewed as a rational entity who can be convinced, on the basis of hard data and logical argument, of the utility (i.e., the feasibility, effectiveness, and efficiency) of the innovation.

3. Didactic assumption. The adopter is viewed as a willing but untrained entity, that is, as having the appropriate values, motivations and the necessary resources, but as not knowing how to perform. He can therefore be taught what is needed to achieve adoption.

4. Psychological assumption. The adopter is viewed as a psychological entity whose needs for acceptance, involvement and inclusion can be employed to persuade him to adopt.

5. Economic assumption. The adopter is viewed as an economic entity who can be compensated for agreeing to adopt or deprived of resources or other possible rewards for refusing to adopt.

6. Political assumption. The adopter is viewed as a political entity who can be influenced to adopt. For example, schools may not be accredited unless they adopt a particular innovation.

7. Authority assumption. The adopter is viewed as an entity in a bureaucratic system who can be compelled to adopt by virtue of his relationships to an authority hierarchy.

By combining these techniques and assumptions a simple two-axis model of change strategies may be developed. Figure 1 displays 42 strategy

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FIGURE 1 ABOUT HERE

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cells each of which represents a combination of assumption and technique. The shaded cells serve as examples. Cell 1 represents an authority-telling strategy, i.e. one in which the administrator assumes his teachers (adopters) are entities in a bureaucratic system. As such, change is effected simply

[41] In his original presentation of this model (1967) Guba referred to the following seven concepts as "strategies". In a later treatment of this theme (1968) he uses the term "assumptions". I am still undecided about the utility of the latter term. "Perceptions" may be more relevant.

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by telling teachers of a particular innovation which the administrator has determined will be introduced. In such a strategy the process of telling of an innovation carries with it the clear implication that the innovation will be adopted. (Educational history is, of course, rich with such examples!) Common variations in this authority-based strategy are represented by cells 1a and 1b. Cell 2 represents a psychological-involving strategy, one in which the administrator identifies and values his subordinates' needs for acceptance and inclusion in the day-by-day life of the organization and thus enlists the potential adopter in identifying problems and providing innovative solutions. Cells 2a and 2b represent common variations.

Experience with the model--both as a practical and an heuristic device--suggests, however, that it should be supplemented. Much greater relevance and applicability is obtained by the addition of a third axis, one that takes into account the target of the administrator's change endeavours, i.e. organizational and/or environmental members who will be concerned with the innovation. Accordingly, Figure 2 displays three axes,[42] the target axis being divided into (1) individual(s), (2) group(s) (both formal and informal), (3) organization, and (4) environment.

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FIGURE 2 ABOUT HERE

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It should be made clear at this stage that, as with all classificatory schemes of this nature, overlap between the respective categories of assumption,

[42] One could, of course, readily conceptualize a multitude of relevant axes. Guba (1968:54-6), for example, suggests other considerations such as "the end state" of the change endeavours and the "nature" of the innovation.

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technique and target is unavoidable. The categories are used, nevertheless, in the belief that such a model will help clarify and systematize an administrator's attempts to bring about change. Nor is it intended to suggest that only one strategy can be employed--or should be employed--by an administrator. The model allows for a variety of strategic approaches.

The addition of the target axis to the change model enables one now to conceptualize strategies on a planar or tri-coordinate level. For example, the administrator referred to previously who used an authority-telling strategy may choose to direct such an approach at the organization as a whole. As shown in Figure 3 his strategy may be represented by the plane

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FIGURE 3 ABOUT HERE

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whose coordinates are (7, 1, 3).[43] It may be, however, that his specific target is the subject or department heads in his school. The strategy in such circumstances would be shown by the plane (7, 1, 2). On the other hand, the strategy of the administrator who perceives his teachers' needs for inclusion and acceptance in the organization may be represented first on the plane (4, 4, 2) as he encourages group problem identification and solving and, second, perhaps on the plane (4, 4, 1) as he encourages contributions to the change process from specific individuals in his school.

It will be obvious that the three-axis model suggests a great number of possible change strategies. Seemingly, however, a number of these

[43] The use of coordinates such as these was suggested by Guba in a personal communication to the author dated April 2, 1974.

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are unlikely in practice and, as such, would appear to be hypothetical artifacts only. For example, in terms of the Guba definitions, authority and involving seem incompatible coordinates for a planar axis. Nevertheless, the model would appear to offer the administrator some useful guidelines in introducing change and, perhaps, some advantages over most other models: First, it is simply stated.[44] Second, the model does serve to add to the administrator's awareness of three vitally important components in the change process. Third, the model provides a means of retrospective analysis of previous (successful and unsuccessful) innovations. Generally, given the advantage of hindsight, the classification of such changes in terms of the three axes is not difficult.[45] Fourth, it is based on the expectation and makes provision for administrators to apply the research findings that have accumulated to date. For example, diffusion research in the U.S. provides the administrator there (and, perhaps, those in other relatively decentralized education systems) with a number of generally accepted dimensions characteristic of innovation-supporting communities (environment), schools (organization), intra-organizational dynamics (groups) and teachers (individuals). In spite of the limitations of these findings, especially in terms of their causal relationships with innovativeness, they may well serve as a means by which administrators may identify potentially innovative (or resistant) organizational members. Similarly, the relevant findings of the emerging studies, e.g. Smith and Keith (1971), may also be applied. Strategies may .

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[44] See, Lippitt's (1973:328-9) model as an example of the complicated structure this paper tries to avoid.

[45] See, for example, Thomas and Bourne (1974). The model was used to analyse a major innovation introduced into one of the large Australian state systems.

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then be adjusted accordingly. The application of the model under these circumstances may well lead administrators attempting to introduce change to include--in varying degrees and at different times--all four targets in their strategies. Fifth, the pivotal base of the model is the assumptions axis. As such, the model cannot guarantee an administrator "success" in effecting change. But the model does serve to challenge the assumptions held about the nature of his subordinates and the basic administrative stance he adopts toward them. Hopefully, familiarity with organizations theory will cause him to ask, for example, "Am I a 'Theory X' or a 'Theory Y' man?" or "Do I prefer a Likert 'system 1' or 'system 4' organization?"[46]

THE THREE-AXIS MODEL: A NORMATIVE GUIDE FOR ACTION

It was hinted above that traditionally superordinates have adopted an authority-telling (7, 1) strategy base for introducing change. (The dismay and pessimism expressed in Thelen's quotation at the beginning of this paper may well be an outcome of this customary approach to change.) The model offers many alternatives to this particular strategy, however. In particular, one of these--the psychological-involving based strategy--seems to provide a foundation on which educational organizations may be successfully changed and also <u>improved</u>. This is, in fact, the axis on which the most significant contemporary approach to change and improvement is founded--<u>organizational development</u>.

As defined by Schmuck and Miles (1971:2) OD is "a planned and sustained effort to apply behavioral science for system improvement, using reflexive, self-analytic elements." The writers stress that the emphasis

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[46] Ladouceur's (1973) study, for example, has revealed significant relationships between the Likert management profile of a school and its climate and capacity to change, teachers' innovative orientation and activity. The management profile accounted for 29% of variance in change climate.

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of OD is on both the ability of a system to cope with change and the relationships of the system with its subsystems and the environment. Although individuals gain insights and new attitudes during the process OD concentrates primarily on the adequacy of organizational communication, the integration of individual and system goals, the development of a climate of trust in decision-making and the effect of the reward system on morale. OD involves system members themselves in assessing, diagnosing and transforming their own organization. Organization members, with the aid of outside consultants, examine current problems, try to identify their causes and then actively participate in the reformulation of goals, the development of new group processes, the redesign of structures and procedures for achieving goals, the alteration of the working climate of the system and the assessment of results. OD is a planned and sustained effort.[47] Bunkel (1970:2) further elaborates the concept:

> . . . (OD) .. doesn't mean any particular technology . . (it) means any manner of help that enables an organization to achieve change deliberately and effectively and with minimal hurtful strain. The key idea is not to start thinking about the organization after someone has committed it to a particular innovation, but to be always ready to cope judiciously and flexibly with any new input from the environment.

In an excellent analysis of the movement Hall (1974) indicates that efforts at organizational development have focussed on the individual, the group and the total organization. In terms of the three-axis model OD attempts can, therefore, be identified on the (4, 4, 1), (4, 4, 2) and (4, 4, 3) planes.

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[47] As an example of OD in action see Croft and Barker (1973).

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By definition, some doubt attaches to the application of OD to the individual target. Beneath this rubric Hall places "management training" and "sensitivity training", both of which are generally regarded as forerunners of organizational development.[48] The group approach[49] to OD uses actual work groups composed of functionally and/or hierarchically related members of the organization. The approach focusses on the dynamics of group behaviour, tends to use a problem-centred approach and deals with relevant problems, processes and relationships affecting actual performance in the organization. System-wide OD[50] involves the total organizational complement, usually over an extended period of time. The approach seeks to develop interdependence and linkage of individuals and groups in the organization. Multi-faceted approaches (rather than a single technique) are used in translating the specific goals of the OD programme into specific change objectives. OD becomes an integral part of an organization, interwoven into its goals and philosophy.

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48 See, for example, Schein (1963), Bass (1967), Dunnette and Campbell (1968).

49 See, for example, Kuriloff and Atkins (1966), Blake, Mouton, Barnes and Griener (1964).

50 See, for example, Winn (1966), Dayal and Thomas (1968), Beer (1971), Pieters (1971), Hundert (1971) and Marcus (1971). For an excellent report on the application of system-wide OD to a high-school faculty see Schmuck, Runkel and Langmeyer (1969).

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CONCLUSION

In presenting a brief yet relatively comprehensive summary of research on educational change and in proposing a change strategy model this paper has been an attempt (to use the jargon of the contemporary campus) to "put it all together". But, like another contemporary phenomenon, the streaker, the sheer audacity of its exposure displays the paper's weaknesses and inadequacies. Undoubtedly, acknowledgement of other important change studies should have been made; more detailed examples of planar change strategies might well have been included.

Again, although mentioned in its title, the text of this paper has scarcely mentioned the improvement of educational organizations. Such an omission does not mean that to the writer change and improvement are synonymous. The widespread disillusionment with much educational change in recent years makes such an assumption unlikely. And yet, there have been many attempts to change education. But, as Fullan (1972:14) suggests "The introduction of more and more innovations to reform the system add up to so many piecemeal attempts that can never get to the root of the problem." To Miles (1965:61) there are two avenues to improvement, the second of which he (like the present author) advocates:

> (a) altering the school's properties in some basic way so traditional bureaucratic approaches will be more congruent with them; or (b) developing alternative models of organization which are a better fit and give guidelines for improving school functioning.

In his development of a planar model the writer has combined the three axes that he perceives are the most important components of any change strategy. The application of the model to effect change depends to a large extent on the administrator's knowledge of organizations and change theory. The assumptions axis from which an administrator launches his change strategy

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will be, hopefully, one that has been influenced and impressed by the work of an increasing number of scholars who have conducted relevant research and who have developed models of effective and ineffective organizations. There is, for example, an obvious convergence of ideas[51] of men such as Shepard (1959), Bennis (1959), Barnes (1960), McGregor (1960), Likert (1961), Blake and Mouton (1961), Burns and Stalker (1961), Litwak (1961), and Argyris (1964). Each seems to have found it useful to develop at least two "ideal types" of organizations in order to categorize his data. The categories are not mutually exclusive, nor do they exhaust all the possibilities. A summary of the preferred, more effective organization described by the foregoing scholars supports the psychological sector of the assumptions axis. It assumes that people are capable of being responsible, committed, productive, and that they desire a world in which the rationality of feelings and interpersonal relationship is as valued as cognitive rationality. Improvement of an organization is effected by achieving these measures. Organizational development, categorized in this paper as involving, is the most recent development in change techniques and, seemingly, that most compatible with the psychological assumption.

There seems some justification, therefore, in advocating a strategy whose base coordinates are (4,4). Given the present state of knowledge the derived planar strategies (4, 4, 1), (4, 4, 2), (4, 4, 3) or (4, 4, 4) would appear to be the best approach to effecting change and improvement in educational institutions.

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[51] I am indebted to Ladouceur (1973) for an excellent summary of the work of these scholars.

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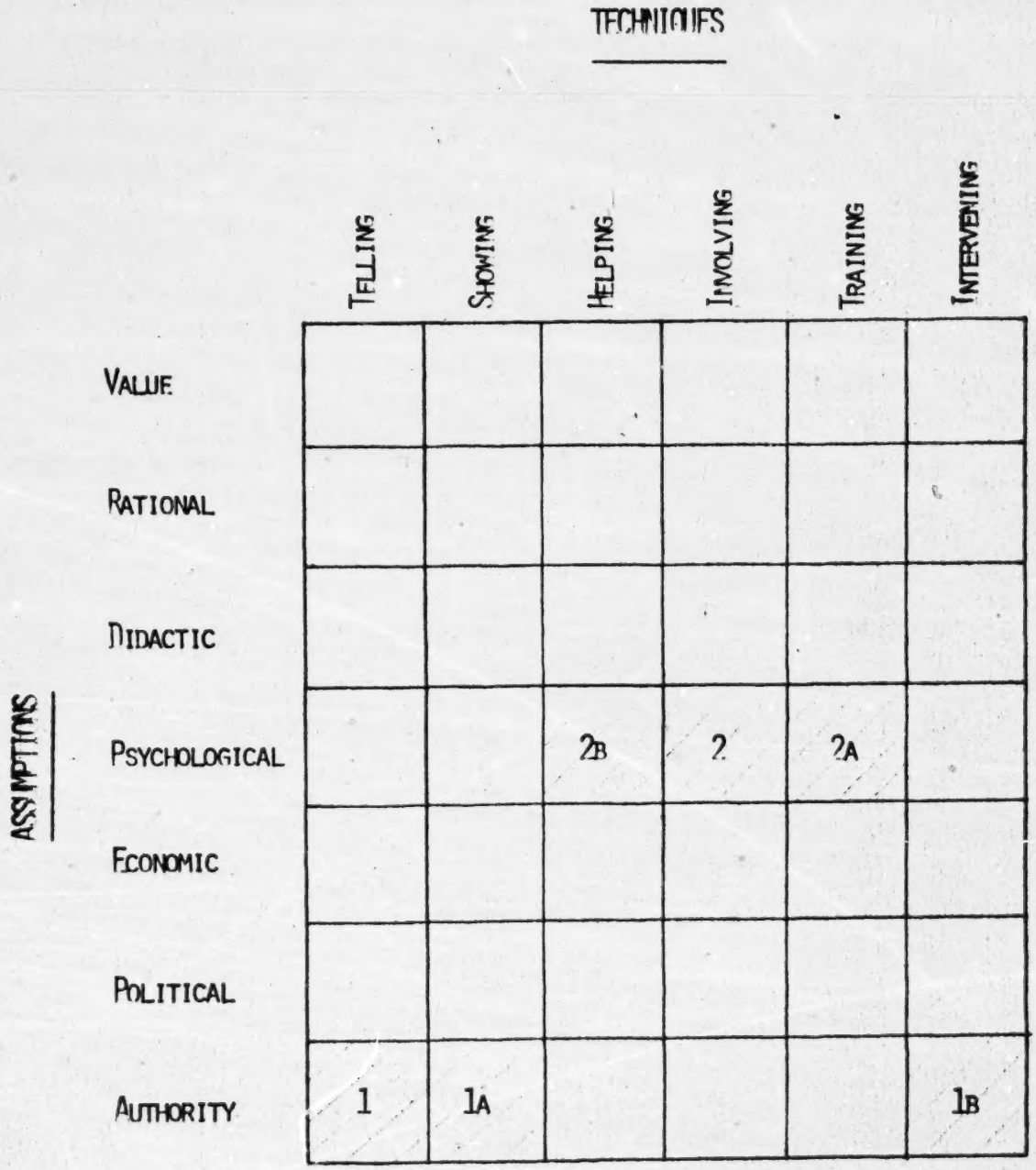

FIGURE 1: TWO-AXIS CHANGE STRATEGY MODEL

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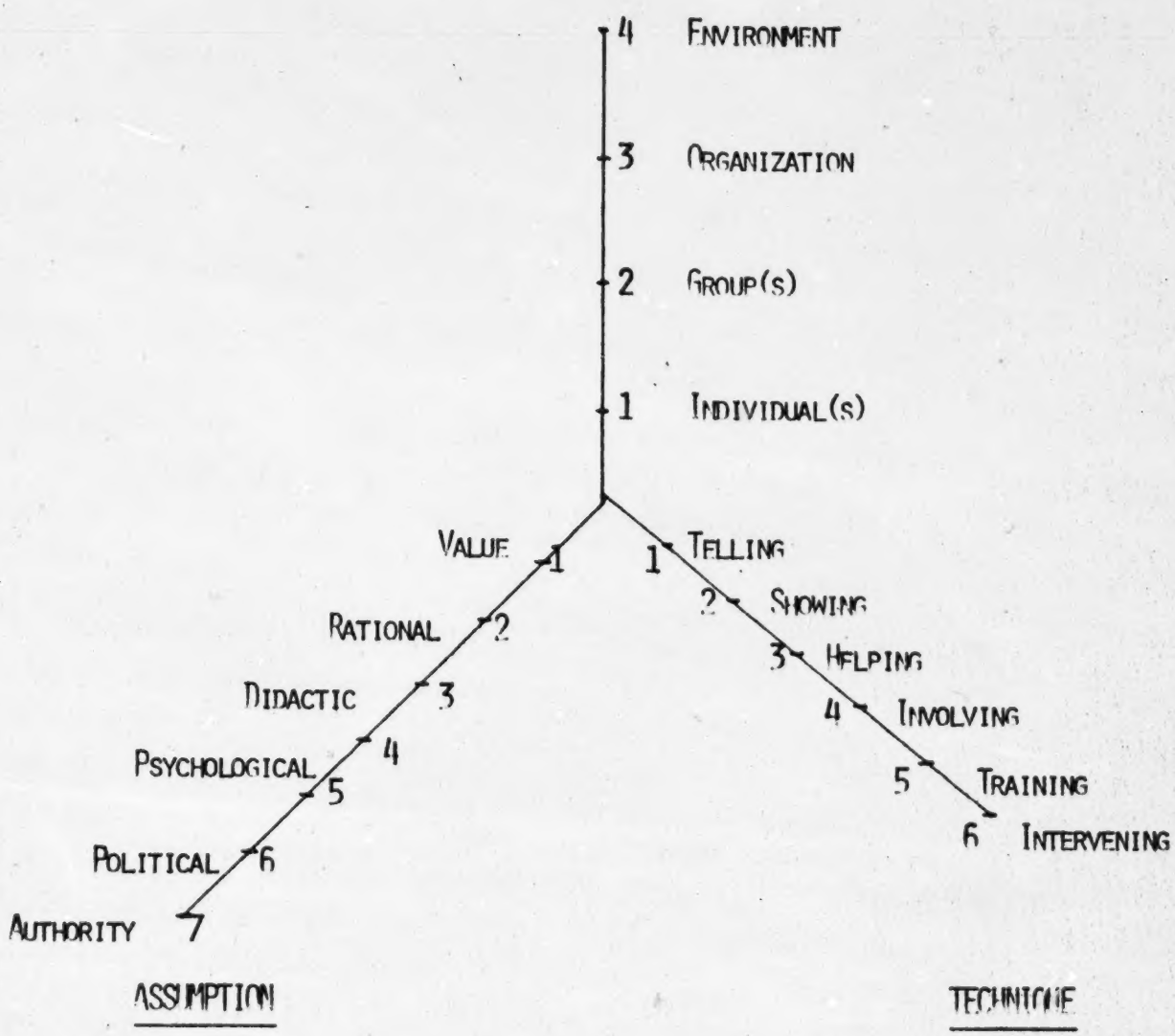

FIGURE 2: THREE-AXIS CHANGE STRATEGY MODEL

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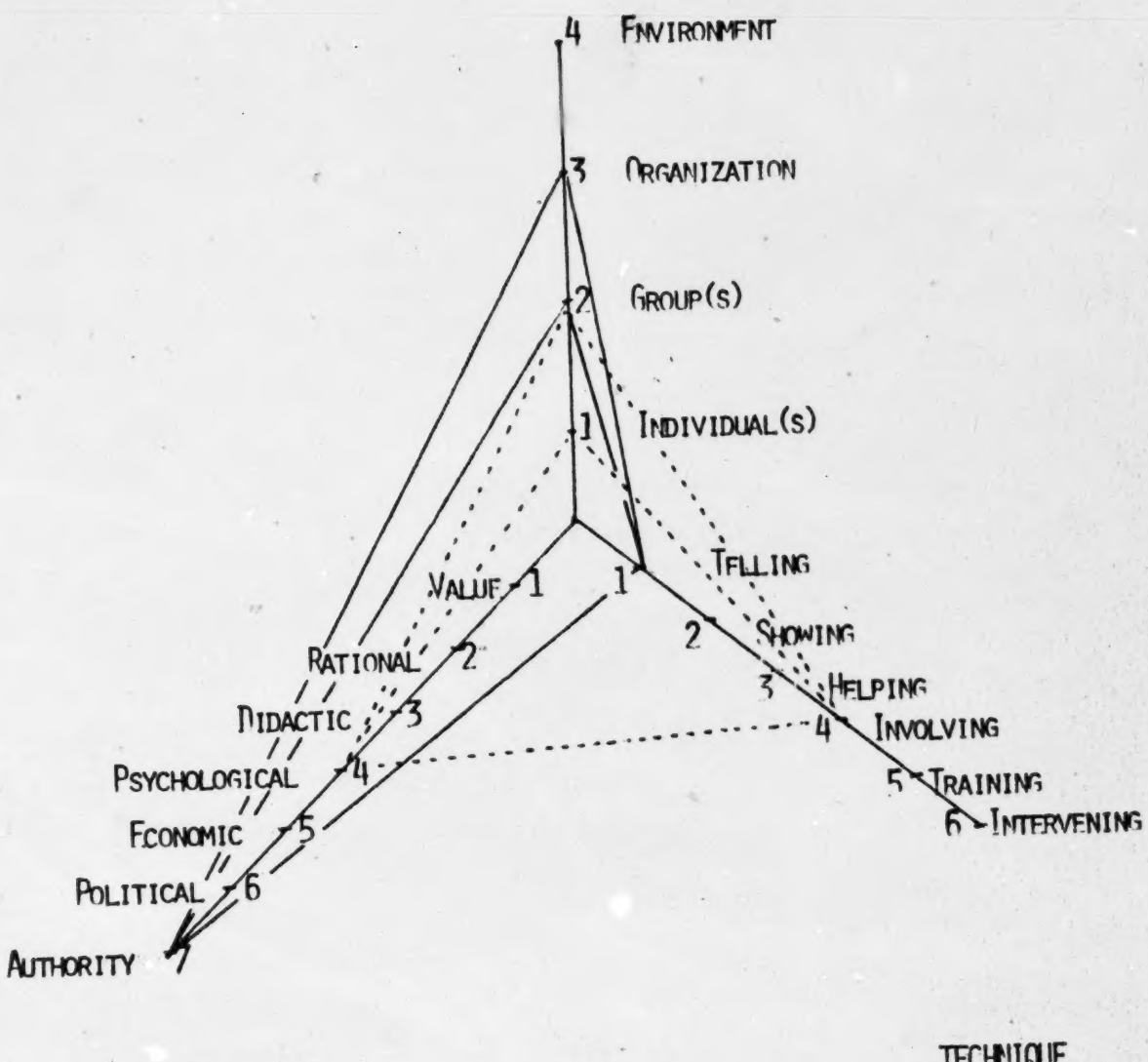

FIGURE 3: PLANAR STRATEGIES